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# *CURIDIA DEBROGANIA*, A NEW GENUS AND SPECIES OF AMPHIPOD (CRUSTACEA: OCHLESIDAE) FROM THE BARRIER REEFS OF BELIZE, CENTRAL AMERICA

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*Abstract.*—The family Ochlesidae is amended to include the new genus *Curidia*, which differs from all other members by possessing maxillipedal palps. *Curidia debrogania* is described and compared to other genera and species within the family Ochlesidae.

*Curidia debrogania* is plesiomorphic by possession of maxillipedal palps, suggesting this member of the small, cryptic family might have originated in the tropical Western Atlantic. Distribution records and ecological notes are included.

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## Family Ochlesidae

Accessory flagellum absent; palp of maxilliped absent or uniarticulate; mouthparts projecting subconically; mandible with molar reduced or lacking; coxae 1–4 subacuminate; telson entire.

## *Curidia*, new genus

*Diagnosis.*—Article 1 and 2 of antenna 1 each with long ventrodistal cusp, peduncular article 1 longer than 2, flagellum 4-articulate, article 2 longest, exceeding peduncular article 1 in length. Coxa 1 rounded ventrally, coxae 2 and 3 dominant, elongate. Upper and lower lips apically acute; mandible with molar; first maxilla with palp, outer plate styliform; second maxilla with both plates styliform, outer plate longest; maxilliped with elongate inner plate, outer plate slightly armed, palp present, consisting of slender unarmed article bearing terminal seta.

*Etymology.*—The name *Curidia* is from the Greek, Kouridios, "wedded," (gender feminine), and is in reference to Stebbing's original designation of the type-genus *Ochlesis*, which means "disturbance." This designation referred to the lack of maxillipedal palps in the type species, *O. innocens* Stebbing, 1910. The presence or absence of these palps is a primary distinction between the hyperiidean and gammaridean amphipods. Hence, Stebbing felt that the lack of these structures was a significant "disturbance," or "disruption" among the Gammarideans. The presence of maxilliped palps in the genus *Curidia* allows the family Ochlesidae to be included without exception among the Gammarideans.

## *Curidia debrogania*, new species

*Description.*—Male: body strongly compressed and very thin dorsally; pleonite 2 with rounded process dorsally; urosomite 1 thin and elongate; epimeron 3, posteroventral margin with upturned hook; head small with acute lateral cephalic lobe, eye prominent, composed of 21 ommatidia; article 1 of antenna 1 longer

Fig. 1. *Curidia debrogania*, holotype, male, 1.59 mm, JDT Bel 48, Carrie Bow Cay, Belize.

than article 2, articles 1 and 2 each with large ventrodistal cusp, cusp of article 1 extending to end of article 3, cusp of article 2 extending halfway along flagellum; accessory flagellum absent; primary flagellum 4-articulate, article 2 elongate, apical and ventral margins with long aesthetascs; antenna 2 shorter and less robust than antenna 1, article 4 with ventral cusp extending halfway along article 5; flagellum 4-articulate, article 2 slightly smaller than article 1; upper lip large, triangular; mandibles massive, styliform, incisors simple, left mandible with small lacinia mobilis, molar small, circular, weakly triturative, ratio of palp articles 1–3, 35:45:57, article 3 with double row of small facial ridges and 3 short spines distally; lower lip slender, apices extended, mandibular projections produced and narrowly rounded; maxilla 1, inner plate small with 1 apical and 1 subapicomedial seta, outer plate attenuated, styliform and slightly recurved distally, medial margin bearing 5 hooked spines subapically, preceded proximally by marginal row of fine setae, palp uniarticulate, borne on raised process and bearing single long terminal seta; maxilla 2, inner plate styliform with 7 pectinate spines (5 medial, 1 apical, 1 subapical) and 4 short setae on medial margin, outer plate longer and thinner than inner plate, bearing several long apical setae, plus single basofacial spine and 6 short setae on lateral margin; maxilliped, inner plate thin, elongate (0.77 times outer plate), with 3 facial and 2 distomedial plumose setae, short apical nail, and numerous short setae on distolateral margin, outer plate curled orally, apical margin rounded with 4 subapical spines and plumose seta, 2 mediofacial setae on oral margin, palp uniarticulate, bearing long terminal seta extending beyond outer plate; coxa 1 small, dentate on anteroventral margin; coxa 2 elongate, anterior margin produced; coxa 3 also elongate with straight anterior margin, posterior margin produced; coxa 4 smaller than coxae 1–3, anteroventral margin truncate; coxae 5 and 6 similar, with posteroventral margins produced; coxa 7

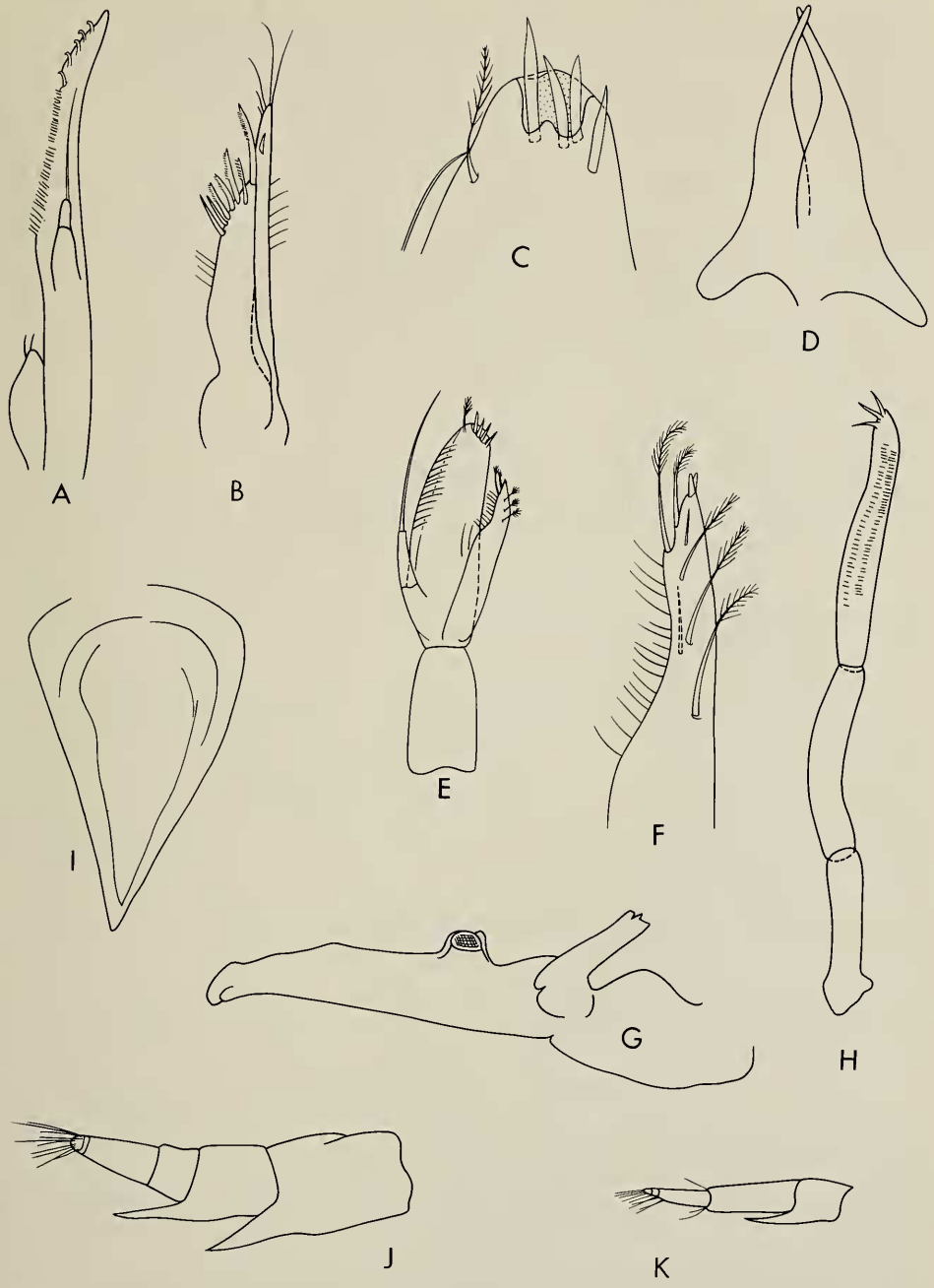


Fig. 2. *Curidia debrogania*, A–I, holotype, male, 1.59 mm, JDT Bel 48: A, Maxilla 1; B, Maxilla 2; C, Maxilliped outer plate; D, Lower lip; E, Maxilliped; F, Maxilliped inner plate; G, Right mandible; H, Mandibular Palp; I, Lower lip. J–K, paratype, female, 1.40 mm: J, Antenna 1; K, Antenna 2.

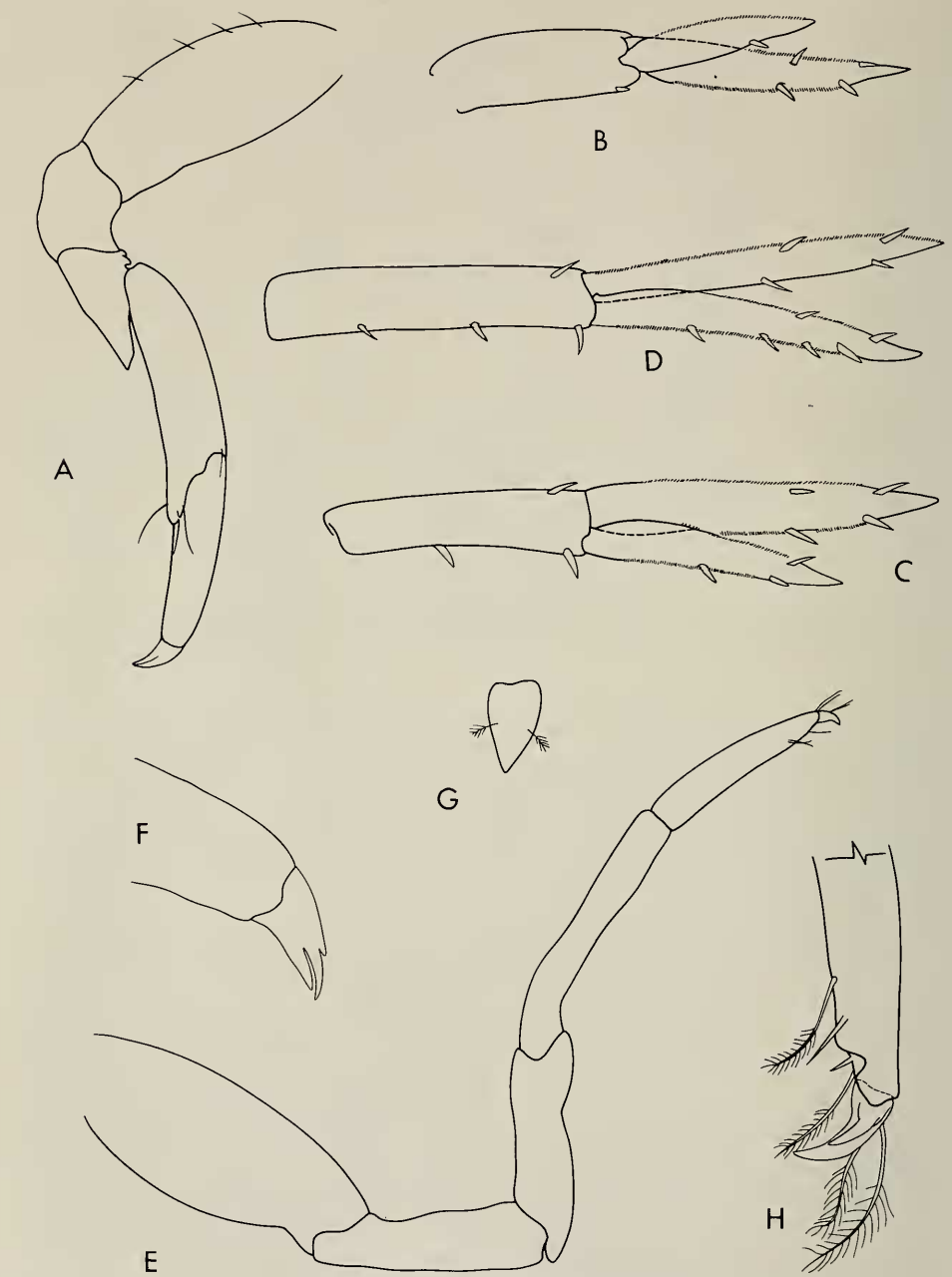


Fig. 3. *Curidia debrogania*, holotype, male, 1.59 mm, JDT Bel 48: A, Gnathopod 2; B, C, D, Uropods 3, 2, 1; E, Gnathopod 1; F, Gnathopod 2; G, Telson; H, Gnathopod 1.

with slightly rounded posterior concavity; gnathopod 1 simple, article 2 slightly inflated, articles 3 and 4 subequal and elongate, article 5 longer than 6, latter with 2 plumose setae and 2 spines near joint, dactyl with accessory process and 2 long plumose setae; gnathopod 2 basis slightly inflated, articles 3 and 4 short, subequal,

article 4 extending distoventrally, article 5 elongate and distoventrally produced, article 6 elongate, shorter than 5, dactyl bifid with accessory process; pereopods 3 and 4, article 4 with anterodistal process extending approximately halfway along article 5, article 6 with several posterior spines, dactyl massive, elongate; pereopods 5–7 similar in structure to pereopods 3 and 4; pleonite 2 with obtuse middorsal hump, pleonite 3, lateral margins with strong upturned tooth; urosomite 1 elongate; uropod 1 reaching beyond uropods 2 and 3, peduncle elongate, subequal to rami, with single apicolateral spine and 3 medial marginal spines, rami lanceolate, subequal, outer ramus with 4 lateral marginal and 2 medial marginal spines, inner ramus with paired medial and lateral marginal spines, both margins of outer ramus and medial margin of inner ramus finely serrate; uropod 2 peduncle with 1 apicolateral, 1 midlateral, and 1 subapicomedial spine, outer ramus subequal to peduncle, with 2 spines on lateral margin and single distomedial spine, inner ramus 1.36 times the outer, paired spines on distolateral and distomedial margins, all margins of both rami finely serrate; uropod 3 peduncle with short subapicolateral spine, outer ramus short, with a single spine on lateral margin, inner ramus 1.43 times the outer with 2 lateral and 2 medial marginal spines, entire lateral margin of outer ramus and both margins of inner ramus finely serrate; telson entire, elongate, with 2 plumose setae.

*Female.*—Apart from the presence of brood plates, the only apparent differences are in antenna 1. Females of *C. debrogania* have smaller cusps and lack ventral setae on the flagellum, all setae being apical. Ovigerous specimens have been taken from Biscayne Bay, Florida, and Belize as small as 1.40 mm.

*Etymology.*—*Curidia debrogania* is named in honor of Debra L. Rogan, September 8, 1950 to December 25, 1981.

*Types.*—Deposited in the United States National Museum of Natural History collections, holotype, USNM 191041, male, 1.59 mm; paratype, USNM 191042, female, 1.40 mm.

*Type-locality.*—JDT Belize 48, Carrie Bow Cay, Belize, 7 June 1980, 6 m, partly cemented coral rubble in patch reef area just inside channel between Carrie Bow Cay and Water Cay, 16°48′N, 80°05′W.

*Color.*—White laterally, blending to translucent brown along dorsal and ventral margins of body. Pereonites 1–7, antenna 2, gnathopods, and pereopods 3–7 with distinct purple or deep maroon banding.

*Distribution.*—Barrier reefs of Belize, to Biscayne Bay, Florida, sublittoral, 2–20 m, usually associated with macroalgae.

*Ecology.*—*Curidia debrogania* is usually associated with coral reef habitats where it is found in areas of high current velocity or wave surge (i.e., lagoonal channels, or in the forereef areas). The mouthparts suggest a parasitic existence although no documentation exists to support this thesis at present. The massive dactyls on pereopods 3–7 could be used to hold on to a host in areas of high current velocities, or may aid in forcing the conical mouthparts into host tissues. The distinctive color pattern suggests that *C. debrogania* may be a mimic of some species of micromollusc. Specimens of *C. debrogania* are usually taken from rocky outcrops that have attached macroalgae.

*Discussion.*—While *C. debrogania* is unique among ochlesids in possessing maxilliped palps, it appears, in other external characters, closest to *Ochlesis alii* Barnard, 1970, from Hawaiian waters, and *O. innocens* Stebbing from the Aus-

tralian littoral. *Curidia debrogania*, *O. alii*, and *O. innocens* are the only ochlesids having both antennal cusps and teeth on the posterior margin of epimeron 3. Males of *O. alii* (not at present described) should prove to have somewhat more prominent antennal cusps than females and therefore approach the condition of *C. debrogania* males. *Curidia debrogania* differs from *O. alii* in 1) the longer cusps on antennae 1 and 2; 2) the more robust palp of maxilla 1; 3) less spinose and laceolate uropods. *Ochlesis innocens* resembles *C. debrogania* in the large antennal cusps, but differs in 4) shorter peduncular article 2 and much longer flagellar article 2 of antenna 1; 5) absence of a palp on maxilla 1 (if Pirlot's identification of *O. innocens* from Isles Aru is correct, then a rudiment of a palp is present); 6) absence of a cusp on antenna 2; 7) ventral margin of coxa 1 acute versus rounded in *C. debrogania*.

Two of the four remaining species of ochlesids, *O. levetzowi* Schellenberg, 1953, and O. *eridunda* Barnard, 1972, lack antennal cusps and a tooth on epimeron 3, and in general body appearance are not as laterally flattened and dorsally acute as those species with antennal cusps and a tooth (or teeth) on epimeron 3. *Oclesis lenticulosa* K. H. Barnard, 1940, from the littoral of South Africa lacks antennal cusps, but has a tooth on epimeron 3. *Oclesis meraldi* Barnard, 1972, from the Australian littoral differs so grossly in external morphology and ornamentation from all other ochlesids that it will be used as the type-species for a new genus (Barnard, pers. comm.).

The presence of maxillipedal palps in *C. debrogania* suggests it to be more primitive (plesiomorphic) than other members of the family, all of which lack this character. This would suggest a Western Atlantic origin for the ochlesids, whereas Pacific and Indo-Pacific forms would be of more recent origin in having lost the maxillipedal palps. This hypothesis will remain unproven until additional material can be studied from wide geographical areas. *Curidia debrogania* is also the smallest representative in the Ochlesidae, with fully ovigerous females being taken at a length of 1.40 mm. Ochlesids have been overlooked by most investigators because of their minute size (most species) and cryptic habitat. Not until thorough sampling of all tropical reef areas is conducted will the zoogeograpical affinities and ecology of ochlesids be better understood.

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